REMARKS

Claims 2-19, 21-38 and 40-57 are pending, with claims 1, 20 and 39 having previously been canceled, without prejudice or disclaimer. By this Amendment, claims 6-9 have been amended to correct informalities therein, and claims 4 and 23 have been amended to clarify the claimed subject matter. Accordingly, claims 2-19, 21-38 and 40-57 are presented for reconsideration, with claims 4 and 23 being in independent form.

Claim 8 was objected to as having informalities.

In response, the claims have been carefully reviewed and amended with particular attention to the points raised in the Office Action. Withdrawal of the objection is respectfully requested.

Claims 2-19, 21-38 and 40-57 were rejected under 35 U.S.C. §101 as allegedly directed to non-statutory subject matter.

It is contended in the Office Action that the claims are not directed to a useful, concrete and tangible result and are directed to manipulating abstract ideas.

Such contention in the Office Action demonstrates a misunderstanding of the claimed subject matter, and Applicant respectfully traverses the rejection based thereon.

As acknowledged in the Office Action, the claimed subject matter of claims 2-19 is an image processing apparatus, the claimed subject matter of claims 21-38 is an image processing method, and the claimed subject matter of claims 40-57 is a computer program which causes a computer to perform the method of claims 21-38, respectively.

Image processing of course produces a useful, concrete and tangible result. Indeed, in the current information age, much of the information is output to an output medium only after undergoing image processing. Indeed, the Office Action cites State Street Bank & Trust Co. v.

Signature Financial Group Inc., 47 U.S.P.Q.2d 1596 (Fed.Cir. 1998) which reiterated the holding in In re Alappat, 31 U.S.P.Q.2D 1545 (Fed.Cir. 1994), that data, transformed by a machine through a series of mathematical calculations to produce a smooth waveform display on a rasterizer monitor, constituted a practical application of an abstract idea (a mathematical algorithm, formula, or calculation), because it produced "a useful, concrete and tangible result."

The present application relates to improved approaches for image processing when image size is changed (for example, in order to be suitable for an output medium). Such an image size change may be, for example, a magnification or reduction of the image. Depending on the particular size change, additional processing (some examples of which are discussed in the application at pages 2-10), which may involve a combination of techniques, may be necessary. It is well recognized in the art that image processing can require large amounts of time and computing resources. In the context of image size change, when resources are not properly managed, the process can take an inordinate amount of time and/or image quality can be compromised.

In the approaches devised by Applicant for improved use of time and resources in image size-change processing, a sharing ratio in the processing between first and second processing ways is calculated and then adjusted so that the entire process of a predetermined image size-change processing is completed within a given time duration, if a processing time for performing the entire processing of the image size-change processing utilizing a first processing way but not a second processing way exceeds the given time duration. As discussed in more detail in the application (see, for example, page 13, lines 10-20, and page 14, line 22 through page 15, line 12), the combination of processing ways is applied according to a sharing ratio, if applying the first processing way for the entire process will consume more than the allowed time. By sharing processing resources, image

quality can be maintained as much as possible while the image size-change processing can be performed within a given time duration.

Applicant maintains that such use of a sharing ratio in image size-change processing clearly achieves a useful, concrete and tangible result.

Withdrawal of the rejection under 35 U.S.C. §101 is respectfully requested.

Claims 2-19, 21-38 and 40-57 were rejected under 35 U.S.C. § 102(e) as purportedly anticipated by U.S. Patent No. 6,510,254 to Nakami et al.

Nakami, as understood by Applicant, proposes an image data interpolation apparatus which interpolates image data so that the number of constituent picture elements thereof is increased. The interpolation apparatus selectively executes one of a plurality of interpolating processes according to an interpolating scale factor (which specifies an amount of interpolation required) and a balance between desired image quality and processing speed.

Nakami, column 14, lines 40-61, which was cited in the Office Action, states as follows:

> Thus, the importance is laid on the processing speed in the interpolation shown in the flowchart of FIG. 8. However, the interpolation in which importance is laid on the image quality is possible. FIG. 21 shows one example of such an interpolation. The interpolation in FIG. 21 differs from that in FIG. 20 in that the interpolating process carried out in a step ST308 is the hybrid bicubic method but not the nearest method. Thus, the interpolation shown in FIG. 21 is a process in which the importance is laid on the image quality in the meaning that execution of the hybrid bicubic method improves results of interpolation in the case of natural images. However, an amount of load of computation is large in the hybrid bicubic method. Accordingly, an amount of computation becomes enormous when the whole interpolation is executed by the hybrid bicubic method even in a case where the interpolating scale factor is large. In view of the enormous amount of computation, the interpolating process is executed by the hybrid bicubic method until the interpolating scale factor becomes "4" and thereafter, the nearest method is carried out for the interpolating process exceeding the interpolating scale factor of "4," so that a rapid increase in the amount of computation is prevented.

Thus, Nakami proposes that one interpolating process may be utilized if image quality is of

high importance, and another interpolating process may be used if processing speed is more important. Nakami also proposes that under some circumstances, a combination of interpolating processes can be used. Nakami (column 13, lines 8-13) states that "it is determined at the step ST206 that the interpolating scale factor exceeds "4," the interpolating process by the hybrid bicubic method is first executed for enlargement by means of multiplication by a predetermined integer, and a remaining part of the interpolation is executed by the nearest method."

Applicant does not find teaching or suggestion in Nakami that a sharing ratio is calculated, a first processing way and a second processing way share processing resources according to the sharing ratio, and the sharing ratio in the processing between first and second processing ways is adjusted so that the entire process of a predetermined image size-change processing is completed within a given time duration, as provided by the subject matter of independent claims 4 and 23 of the present application.

Nakami merely proposes that one or a combination of interpolating processes can be used, and the decision can be based in part on processing speed.

However, Nakami simply does not teach or suggest (i) calculation of a sharing-ratio between a first processing way and a second processing way, for sharing processing resources, and (ii) adjustment of that sharing ratio so that the entire image size-change processing process is completed within a given time duration.

If the Examiner disagrees therewith, Applicant would appreciate clarification of what the Examiner equates with sharing-ratio, as well as clarification of where teaching or suggestion can be found in Nakami of calculation of such a sharing-ratio and adjustment of such a sharing-ratio.

Applicant respectfully submits that independent claims 4 and 23, and the claims depending

therefrom, are patentable over the cited art, for at least the above-mentioned reasons.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Patent Office is hereby authorized to charge any fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,

Paul Teng, Reg. No. 40,837
Attorney for Applicant
Cooper & Dunham LLP
Tel.: (212) 278-0400